Safe harbor

Use of forward-looking statements

- This presentation contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, including, but not limited to, statements related to Enphase Energy's financial performance, advantages of its technology, product cost reductions and market trend.
- These forward-looking statements are based on Enphase’s current expectations and are inherently subject to risks and uncertainties. They should not be considered guarantees of future results, which could differ materially from the results set forth in, contemplated by, or underlying this presentation.
- Factors that could cause actual results to differ materially from the Company’s expectations are described in the reports filed by the Company with the Securities and Exchange Commission pursuant to the Securities Exchange Act of 1934 and we encourage you to review our filing carefully, especially the sections entitled “Risk Factors” in our quarterly report on form 10-Q for the quarter ended September 30, 2015.
- Enphase Energy undertakes no duty or obligation to update any forward-looking statements contained in this presentation as a result of new information, future events or changes in its expectations.
<table>
<thead>
<tr>
<th>Name</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paul Nahi</td>
<td>Enphase Energy vision</td>
</tr>
<tr>
<td>Martin Fornage</td>
<td>Technology for cost reduction</td>
</tr>
<tr>
<td>Greg Steele</td>
<td>Engineering for cost reduction</td>
</tr>
<tr>
<td>Darien Spencer</td>
<td>Operations and automation for cost reduction</td>
</tr>
<tr>
<td>Stefan Zschiegner</td>
<td>Product cost reduction roadmap</td>
</tr>
<tr>
<td>Raghu Belur</td>
<td>Home energy systems roadmap</td>
</tr>
<tr>
<td>Stefan Zschiegner</td>
<td>Enlighten demo</td>
</tr>
</tbody>
</table>
Enphase focus and priorities

Enphase is executing on its strategy to address market-driven cost pressures in the near term, while positioning the company for long-term growth:

[1] Significantly reduce the cost of a solar system through product cost reduction and simplification of the installation process

[2] Create a total energy solution for homes and businesses through the development of new products, features and services
Enphase goals

[1] Invest in our next generation technology to reduce costs by 50% in 24 months, towards $0.10 per Watt

[2] Provide our partners with best-in-class power electronics, storage solutions, communications, and load control all managed by a cloud based energy management system
Enphase in more than 375,000 systems in 95 countries
Martin Fornage
Chief Technology Officer
Enphase 10 years of innovation

- 2006
  - First microinverter system introduced
  - 1 million units shipped, Enphase expands globally

- 2015
  - Fourth-generation technology introduced
  - AC battery announced
  - Fifth-generation introduced

- First predictive digital control system
- First custom chip
- First Mixed signal ASIC
- Next Gen power train control design
- Next Gen power train first operation
- Next Gen enclosure prototypes
Microinverter design constraints are difficult to balance

- Efficiency
- Cost
- Reliability
- Certifications
- EMC
- Thermal
General design philosophy

- The **System** approach is critical

- System behavior is defined by **Software**

- **Distributed architecture** wins

- **Digital control** wins
The approach to inverter system design

- Choose a low noise, high efficiency power train
- Move to a polymeric enclosure
- Simplify the wiring
- Simplify the installation
Enphase power train and control

- Advanced power train features
  - Fully resonant, soft-switched, bidirectional, single-stage converter
  - World’s first sub-cycle control capability
  - Much improved EMC signature
  - WBG semiconductors can be used to further reduce cost and increase efficiency

- Additional integration opportunities
Polymeric enclosure

Low-noise power train allows for polymeric enclosure

- Reduced mechanical stress on components
- Lowest transformation cost
- Higher freedom of design
- Improved thermal performance
- No ground wire
- Embedded bulkhead connectors reduce number of cables needed
2-wire cable system

Polymeric enclosure enables a 2-wire AC cable

- Less than half the weight per inverter
- Easier installation
  - More flexible
  - Much smaller bend radius
AC module

Advances in size, weight and technology enable the AC module

- Next level of integration with PV module
- Eliminates unnecessary components like extra wire and bypass diodes
- Possible removal of PV junction box
Greg Steele
Senior VP of Engineering
Key technologies to enable cost reductions

- Architectural design and silicon integration
- Magnetics design
- Polymer enclosure
- Cable simplification
Where is the cost in the inverter today (M250)?

- Mechanical: 18%
- Actives: 16%
- VAM: 16%
- IC's: 13%
- Magnetics: 12%
- Cables (AC and DC): 10%
- Passives: 8%
- Fab: 7%
- Other: <1%
Where will the cost be in the future (S300)?
Cost reduction – “By the numbers”

<table>
<thead>
<tr>
<th></th>
<th>M250</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Part count</strong></td>
<td>396</td>
</tr>
<tr>
<td><strong>ASIC count</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>ASIC gates (millions)</strong></td>
<td>1.8</td>
</tr>
<tr>
<td><strong>AC cable wires</strong></td>
<td>4</td>
</tr>
<tr>
<td><strong>Weight (kg)</strong></td>
<td>1.66</td>
</tr>
<tr>
<td><strong>AC cable weight (kg)</strong></td>
<td>0.985</td>
</tr>
<tr>
<td><strong>Max AC power</strong></td>
<td>250W</td>
</tr>
</tbody>
</table>
## Cost reduction – “By the numbers”

<table>
<thead>
<tr>
<th></th>
<th>M250 2015</th>
<th>S290 2016</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part count</td>
<td>396</td>
<td>339</td>
<td>-14%</td>
</tr>
<tr>
<td>ASIC count</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ASIC gates (millions)</td>
<td>1.8</td>
<td>2.8</td>
<td>+55%</td>
</tr>
<tr>
<td>AC cable wires</td>
<td>4</td>
<td>2</td>
<td>-50%</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>1.66</td>
<td>1.38</td>
<td>-17%</td>
</tr>
<tr>
<td>AC cable weight (kg)</td>
<td>0.985</td>
<td>0.407</td>
<td>-59%</td>
</tr>
<tr>
<td>Max AC power</td>
<td>250W</td>
<td>290W</td>
<td>+16%</td>
</tr>
</tbody>
</table>
## Cost reduction – “By the numbers”

<table>
<thead>
<tr>
<th></th>
<th>M250 2015</th>
<th>S290 2016</th>
<th>S300 2017</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part count</td>
<td>396</td>
<td>339</td>
<td>250</td>
<td>-37%</td>
</tr>
<tr>
<td>ASIC count</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>+200%</td>
</tr>
<tr>
<td>ASIC gates (millions)</td>
<td>1.8</td>
<td>2.8</td>
<td>5</td>
<td>+178%</td>
</tr>
<tr>
<td>AC cable wires</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>-50%</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>1.66</td>
<td>1.38</td>
<td>1.15</td>
<td>-31%</td>
</tr>
<tr>
<td>AC cable weight (kg)</td>
<td>0.985</td>
<td>0.407</td>
<td>0.407</td>
<td>-59%</td>
</tr>
<tr>
<td>Max AC power</td>
<td>250W</td>
<td>290W</td>
<td>300W</td>
<td>+20%</td>
</tr>
</tbody>
</table>
Enphase semiconductor development

- 8th generation
- 2.8 million gates
- Designed in partnership with TSMC
  - 30-person design team in Silicon Valley
- TSMC 55nm LP CMOS process for SoC
Substantial reduction in size and cost
Residential and commercial microinverters

M250  S290  S300
Design for reliability and manufacturability

- Fewer parts
- Reduced weight and size
- Simplified enclosure
- Single-sided board
- Reduced time and cost to manufacture
- Smaller potting volume
Darien Spencer
VP of Manufacturing and Operations
Global industry-leading operations

<table>
<thead>
<tr>
<th>Costs</th>
<th>Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 15% year-over-year cost</td>
<td>• Global experts</td>
</tr>
<tr>
<td>reduction demonstrated</td>
<td>• Highly leverageable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quality &amp; reliability</th>
<th>Factories</th>
</tr>
</thead>
<tbody>
<tr>
<td>• &gt;25 year useful life for</td>
<td>• Highly automated</td>
</tr>
<tr>
<td>microinverters</td>
<td>• Global, scalable, flexible</td>
</tr>
<tr>
<td>• Highest factory yield</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inventory carrying</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Few SKUs</td>
<td>• Global footprint</td>
</tr>
<tr>
<td></td>
<td>• Low cost</td>
</tr>
<tr>
<td></td>
<td>• Automated systems</td>
</tr>
</tbody>
</table>
Higher manufacturing volume reduces costs

Microinverter cost breakdown

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
<th>Impact at 2x volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bill of materials</td>
<td>75</td>
<td>- 8.5</td>
</tr>
<tr>
<td>Value-add manufacturing</td>
<td>13</td>
<td>- 1.5</td>
</tr>
<tr>
<td>COGS overheads &amp; warranty</td>
<td>12</td>
<td>- 5.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
<td><strong>- 15%</strong></td>
</tr>
</tbody>
</table>
Manufacturing cost drivers continue to improve

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2015</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bill of materials</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sourcing localization</td>
<td>Asia/Europe</td>
<td>Asia/Europe</td>
<td>Asia/Europe/LA</td>
</tr>
<tr>
<td>Raw material and transformation</td>
<td>Manual</td>
<td>Semi-automated</td>
<td>Automated</td>
</tr>
<tr>
<td>Component count</td>
<td>425</td>
<td>396</td>
<td>250</td>
</tr>
<tr>
<td><strong>Value-add manufacturing</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor/automation (units/quarter/operator)</td>
<td>1,000</td>
<td>2,500</td>
<td>5,000</td>
</tr>
<tr>
<td>Process touchpoints</td>
<td>180</td>
<td>96</td>
<td>68</td>
</tr>
<tr>
<td>Yield management (cum)</td>
<td>93%</td>
<td>99.5%</td>
<td>99.8%</td>
</tr>
<tr>
<td>SKU management (lines)</td>
<td>2 SKU-specific automated + 2 manual</td>
<td>3 universal automated</td>
<td>4 universal automated</td>
</tr>
<tr>
<td>Component lead time (average days)</td>
<td>65</td>
<td>52</td>
<td>45</td>
</tr>
<tr>
<td>Depreciation/asset efficiency</td>
<td>Baseline</td>
<td>+25%</td>
<td>+50%</td>
</tr>
<tr>
<td>COGS overheads</td>
<td>Baseline</td>
<td>+100%/unit</td>
<td>+200%/unit</td>
</tr>
<tr>
<td>Automation line throughput (number/day/line)</td>
<td>7,500</td>
<td>11,000</td>
<td>15,000</td>
</tr>
</tbody>
</table>
Quality and reliability throughout the process

Enphase continues investment in quality and reliability infrastructure with commissioning of New Zealand QA lab
Manufacturing automation creates efficiencies
Stefan Zschiegner
VP of Product Management
50% cost reduction in 2 years

$ per Watt

$0.25

$0.20

$0.15

$0.10

$0.05

$-

Q1-15  Q2-15  Q3-15  Q4-15  Q1-16  Q2-16  Q3-16  Q4-16  Q1-17  Q2-17  Q3-17  Q4-17

Enphase microinverter

String inverter
AC Module: A solar module with an integrated microinverter

- Lower cost
  - Microinverter cost savings: 2 cents per Watt
  - Module cost savings: 3 cents per Watt
  - Installation cost savings: 2 cents per Watt
AC Module: A solar module with an integrated microinverter

- Lower cost
  - Microinverter cost savings: 2 cents per Watt
  - Module cost savings: 3 cents per Watt
  - Installation cost savings: 2 cents per Watt

- Simplified installation and logistics
  - Simplified design and installation process
  - Single SKU
  - Simplified logistics
Higher power modules uniquely benefit microinverters

Global PV module technology mix (in MW)

- **New technology**
- **High power “Mono”**
- **Traditional “Multi”**

- **2015**
  - Thinfilm: 10%
  - Multi C Si: 20%
  - Mono Si: 30%
  - New Technology: 40%

- **2016**
  - Thinfilm: 10%
  - Multi C Si: 20%
  - Mono Si: 30%
  - New Technology: 40%

- **2017**
  - Thinfilm: 10%
  - Multi C Si: 20%
  - Mono Si: 30%
  - New Technology: 40%

- **2018**
  - Thinfilm: 10%
  - Multi C Si: 20%
  - Mono Si: 30%
  - New Technology: 40%
Raghu Belur
VP of Products and Strategic Initiatives
The **Enphase** home: Complete energy solution

Increase revenue per home from +$1,000 to +$6,000
Consumption monitoring and disaggregation
Enhancing the consumer engagement
Enphase AC Battery storage solution

1.2 kWh energy capacity, 270W power, 10+ year lifetime

• Modular and scalable distributed architecture

• Highest lifetime value

• Seamless integration

• Safe and reliable
Enphase storage solution

Distributed PV (AC Module) and Distributed storage (AC Battery)
Enphase AC coupled versus DC coupled systems

Value
• Efficiency
• 2 cycles per day, >95% depth of discharge
• Less expensive to install

Modular
• Pay only for what you need
• Expandable

Reliability
• No single point of failure

Safety
• No high voltage DC
• TUV safety certified LFP versus NCA and NMC chemistry

Retrofit
• Easy to retrofit any solar system
Efficiency in AC versus DC coupled systems

(1) DC → AC

(2) AC → DC

(3) RTE

(4) DC → AC

~88% Avg. storage efficiency

(1) DC → DC

(2) Losses Not included

(3) RTE

(4) DC → AC

~88% Avg. storage efficiency

Losses Not included
The AC coupled advantage

Enphase’s distributed architecture is the clear choice for retrofits

Enphase AC Battery
No need to replace existing inverters

DC coupled battery with string & DC optimizers
Must upsize inverter to accommodate battery
Evolution of use cases for storage

- **Aggregated grid services** – Supporting grid stability
- **ToU optimization** – moving energy from lower to higher ToU periods
- **Self-consumption** – storing excess PV power to offset expensive rates
- **Backup** – storing power for use during a grid power outage
- **Off-grid** – being energy self-sufficient without reliance on the grid
Paul Nahi
President and CEO
Enphase goals

[1] Invest in our next generation technology to reduce costs by 50% in 24 months, towards $0.10 per Watt

[2] Provide our partners with best-in-class power electronics, storage solutions, communications, and load control all managed by a cloud based energy management system
The Enphase Promise:
We make solar simple and energy smart.